

# LIMITED-ANGLE FREQUENCY-DISTANCE RESOLUTION RECOVERY IN NUCLEAR MEDICINE IMAGING

## Abstract of the Disclosure

A nuclear camera (10) includes a plurality of  
5 detector heads (12) which have collimators (14) for fixing  
the trajectory along which radiation is receivable. A  
rotating gantry (22) rotates the detector heads around the  
subject collecting less than 360° of data, e.g., 204° of  
data. A zero-filling processor (50) generates zero-filled  
10 projection views such that the actually collected  
projection views and the zero-filled projection views span  
360°. A smoothing processor (56) smooths an interface  
between the zero-filled and actually collected projection  
views. The zero-filled and smoothed views are Fourier  
15 transformed (60) into frequency space, filtered with a  
stationary deconvolution function (62), and Fourier  
transformed (64) back into real space. The resolution  
recovered projection data sets in real space are  
reconstructed by a reconstruction processor (68) into a  
20 three-dimensional image representation for storage in an  
image memory (70).